

Ancona Report

WATER MONITORING REPORT 1996 - 2007



A monitoring program is important as:

- An educational tool that introduces water quality issues to the general community;
- A means of gathering base datasets to allow useful discussion of issues and provide some direction for future works;
- A method of assessing the value of works completed.



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Front Page: Eildon Weir at Bonnie Doon South, 1999

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Introduction

Waterwatch is a community water quality monitoring program that assists the community in monitoring their local waterway. The Program aims to:

- Increase community awareness and understanding of water quality issues;
- Increase community involvement in water management decisions; and,
- Generate useful data for community and agency use which complements that collected by Agency monitoring networks.

Monitoring networks across the Goulburn Broken Catchment have been formed to study water quality in their local areas. The networks are able to test a local stream for a range of parameters using equipment supplied by the Waterwatch Program. The parameters selected for testing in each area depend upon the water quality issues identified by the monitoring network. Monitors also record the date, time and rainfall to assist in the interpretation of the data.

Monitoring commenced in the Ancona Landcare Group area in 1997. There is a five year gap in the data before monitoring recommenced in 2006 which makes interpretation difficult. A total of seven sites are now regularly tested for a range of chemical and biological parameters.

This report contains the following information:

1. Information about water quality parameters
2. A tabular summary of data collected at all sites year by year. This table includes historical data collected by Waterwatch dating back to 1996
3. Comparisons of local water quality data with State Environment Protection Policy (SEPP) guidelines
4. Raw data from 1996 to 2007.

There are many reasons why people are prepared to become involved in a water monitoring program. **In fact, there are as many different reasons as there are people participating in a program!**

The challenge for Waterwatch as a community monitoring program is to help monitoring networks gather the information that **they** want. In the process, the data collected can be extremely valuable to waterway management agencies that are committed to improving the condition of our rivers and streams.

Definitions

Median	Middle number in a series
Mean	Average calculated by adding all data points and dividing by the number of data points

Data Representation

Water quality data in this report is represented and interpreted using a number of methods of presentation:

1. Individual data points (see Appendix B).
Individual monitoring results are arranged in tabular form according to site and date.
2. Overall median where the median is calculated using all data collected at the site during the monitoring project.
This gives an overall indication of water quality at that site during the monitoring program. The overall median is compared to a Waterwatch rating scale.
3. Annual median where a median is calculated year by year
This shows the changes or trend in water quality over time.
4. Comparison of annual medians in the Ancona region with the SEPP guideline for water quality.
The SEPP objectives identify the 'ideal' result range for environmental data at a particular location in a waterway.

Turbidity

Turbidity is the cloudiness of water and is the result of suspended material in the water. The suspended material decreases the ability of light to pass through the water column and can limit plant growth. This, in turn, affects the fish and invertebrate communities which feed on and live in the plants. Turbidity may be caused by silt, micro-organisms, plant material and chemicals. However, the most frequent causes of turbidity in rivers and other water bodies are algae and inorganic material produced from soil weathering and erosion.

High levels of turbidity have a two-fold effect on water:

- It loses its ability to support a large variety and number of aquatic organisms. Where there is less light penetrating the water, there will be less photosynthesis which reduces the level of oxygen in the water.
- The water becomes warmer because any suspended material absorbs heat from the sun. This also decreases the amount of oxygen dissolved in water.

Turbidity can be controlled by the retention of vegetation along streams and good farming practices such as contouring, stubble retention and off-stream watering of stock.

Turbidity in the Ancona Landcare Group Region

Waterwatch has monitored a number of sites in the Ancona region since 1997. These tables and graphs summarise the data collected by *Ancona Landcare Group* and *Waterwatch* over this monitoring period.

Site Code	Site Description	Turbidity Medians (NTU)											
		1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
BKT005	Upper Brankeet Creek at Brankeet	-	-	35	-	-	-	-	-	-	-	-	-
BKT006	Brankeet Ck at Ancona	-	6	5.5	8.5	5*	-	-	-	-	-	-	9*
BKT010	Brankeet Ck at Mitchell Road Crossing	-	-	15	-	17	-	-	-	-	-	10*	22
BKT020	Brankeet Creek downstream at Black's pump	-	-	27	-	16*	-	-	-	-	-	19*	-
BKT025	Brankeet Ck at Ancona Woodfield Road	-	-	-	-	-	-	-	-	-	-	19	17
HEY010	Upper Heyfield Creek (Tributary to Brankeet Ck)	-	-	11	13	-	-	-	-	-	-	9*	27*
NTH010	North Creek before Brankeet Confluence	-	-	-	-	-	-	-	-	-	-	9*	23*

Rating: Turbidity for the Valleys –
 <10 NTU Excellent, <12.5 NTU Good, <15 NTU Fair, <22.5 NTU Poor, >22.5 NTU Degraded

Note: results in italic with * indicate <5 data sets used for interpretation.

Table 1

Table 1 represents the median turbidity at each site over the entire period of The Ancona Landcare Group monitoring project. Although results are patchy, turbidity results in Brankeet Creek at Ancona have been consistently "EXCELLENT" over the years of monitoring. Other sites, however, have inconsistent results, with Upper Heyfield Creek a good example of the variation seen in turbidity – results have swung from good to fair, through to excellent followed by degraded. More frequent monitoring needs to occur to determine anything solid about this site or indeed this region.

Salinity

Just as excess salt in our diets can be bad for our health, high salt levels in the environment negatively affect plants, animals and soils in and near waterways. Salinity is potentially the largest environmental problem facing Australia and is a major problem in Northern Victoria. The most concentrated problem areas are in the Shepparton Irrigation Region and areas around and to the west of Seymour. In the SIR, rising watertables have brought salinity closer to the surface, and at Seymour, dryland salting problems have occurred because deep rooted trees have been replaced by seasonal crops and grasses. Tree clearing can lead to dramatic rises in watertables. The solutions to salinity problems include revegetation of recharge areas and greater efficiency of irrigation in areas such as the SIR. The information below explains the effect of salinity in agriculture.

0-800 EC

If you tested the water from your tap at home it would be within this range. This is good drinking water for people and suitable for all animals. When water of 300EC is used in overhead sprinklers by irrigation farmers, plants that are sensitive to salt may develop leaf scorch.

800-2500 EC

People can drink water within this range but it would start to taste very salty. This water is still suitable for all animals.

Peas, apricots and grapes can't be grown with water over 1,500 EC. If this water is used for irrigation farming, special care must be taken with drainage and choosing plants that are tolerant to salt. For example, lucerne can be irrigated with water of 2,000 EC and white clover with water of 1,000 EC, provided they are grown on sandy soil with good drainage.

2,500-10,000 EC

Water in this range is not suitable for people and should only be drunk in an emergency. When water over 4,000 EC is given to laying hens it causes their eggs to crack. Water over 6,000 EC is unsuitable for pigs and poultry. Highly saline water may also contain a high level of magnesium which can be harmful to stock. A water sample should be sent to a laboratory for analysis and specific advice obtained. This water is generally not used for irrigation farming except on some crops that have a very high tolerance to salt.

Pears, apples and tomatoes could not be grown with water in this range.

Over 10,000 EC

Don't drink this water! Water over 10,000 EC has an extremely high salinity. This water is unsuitable for people and for most animals. Only beef cattle and adult sheep can survive on water in this range. Irrigation farming is not possible with such highly saline water. In dryland areas only salt tolerant pastures will survive.

At 50,000 EC water has the same salinity as the sea. This water can be used for making concrete and flushing toilets as long as they are able to resist corrosion.

Salinity in the Ancona Landcare Group Region

Waterwatch has monitored salinity in the Ancona region in recent times only, bar Brankeet Creek at Ancona which was monitored from 1997 to 2000 also.

Site Code	Site Description	Salinity Medians (EC)											
		1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
BKT005	Upper Brankeet Creek at Brankeet	-	-	-	-	-	-	-	-	-	-	-	-
BKT006	Brankeet Ck at Ancona	-	98	110	91	100	-	-	-	-	-	-	110*
BKT010	Brankeet Ck at Mitchell Road Crossing	-	-	-	-	-	-	-	-	-	-	-	120
BKT020	Brankeet Creek downstream at Black's pump	-	-	-	-	-	-	-	-	-	-	-	-
BKT025	Brankeet Ck at Ancona Woodfield Road	-	-	-	-	-	-	-	-	-	-	146	161
HEY010	Upper Heyfield Creek (Tributary to Brankeet Ck)	-	-	-	-	-	-	-	-	-	-	-	155*
NTH010	North Creek before Brankeet Confluence	-	-	-	-	-	-	-	-	-	-	-	85*

Rating:

Conductivity for the Valleys –
<80 EC Excellent, <240 EC Good, <400 EC Fair, <600 EC Poor, >600 EC Degraded

*Note: results with * indicate <5 data sets used for interpretation.*

Table 2

Table 2 above shows that Electrical Conductivity (salinity) at all sites in the Ancona Landcare Group Region have consistently rated as "Good" during the periods that they have been monitored.

Phosphorus

Phosphorus is a nutrient that occurs naturally at low concentrations in water and it is essential for all forms of life. It comes from processes like the weathering of rocks and from the decomposition of organic matter such as plant litter. Other sources of phosphorus entering river systems include:

- sewage treatment works
- runoff from agricultural land
- stormwater drains
- runoff from forests
- irrigation drains intensive agricultural industries

An increase in phosphorus levels in streams may result from erosion, discharge of sewage, detergents, urban stormwater and rural runoff that contains fertilisers and animal and plant material. When the phosphorus concentration becomes too high, problems such as algal blooms, excessive growth of aquatic weeds and the loss of species diversity occurs.

Phosphorus in The Ancona Landcare Group Region

Two sites from the Ancona region have been tested intermittently for phosphorus by Waterwatch since 1997.

Site Code	Site Description	Total Phosphorus MEDIANS (mg/L)											
		1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
BKT006	Brankeet Ck at Ancona	-	0.04	0.04	0.05	-	-	-	-	-	-	-	-
BKT025	Brankeet Ck at Ancona Woodfield Road	-	-	-	-	-	-	-	-	-	-	0.04	0.06

Ratings: Total Phosphorus for the Mountains, Valleys and Plains-

<0.01 mg/L Excellent, <0.025mg/L Good, <0.05mg/L Fair, <0.1mg/L Poor, >0.1mg/L Degraded

*Note: results with * indicate <5 data sets used for interpretation.*

Table 3

As can be seen, results found in the region have been poor to fair. Without further monitoring, trends and causes are difficult to assume.

SEPP Compliance

The State Environment Protection Policy (SEPP) Waters of Victoria (WoV) water quality objectives identify the 'ideal' result range for environmental data at a particular location in a waterway. If a site fails a SEPP objective for one parameter, it indicates a possible problem for the whole system, not just for the one parameter and not just for the one site). It is recommended that an ecological risk assessment (ERA) be undertaken to determine if there is a risk to the values (or "beneficial uses") associated with that stream.

Basically, any set of results that fails the objective is a red flag to look more closely at what's going on. This differs from aiming for a particular turbidity or total phosphorus result, as an ERA may determine that it is acceptable to exceed the SEPP objectives for some parameters depending on the use/value of the waterway.

The SEPP (WoV) water quality objectives that apply to current Victorian Water Quality Monitoring Network (VWQMN) sites in the Goulburn Broken CMA region are given.

A minimum of 11 samples collected from monthly monitoring over a one-year period is required to assess against SEPP (WoV) water quality objectives. Colours refer to the SEPP (WoV) segments that apply to the site.

SEPP (WoV) Environmental Quality Objectives for Rivers and Streams – water quality

SEGMENT	INDICATOR							
	Total phosphorus (ug/L)	Total nitrogen (ug/L)	Dissolved oxygen % saturation		Turbidity (NTU)	Electrical conductivity (uS/CM)	pH (pH units)	
	75 th percentile	75 th percentile	25 th percentile	maximum	75 th percentile	75 th percentile	25 th percentile	75 th percentile
Forests – B								
• all areas except Otways	≤25	≤350	≥90	110	≤5	≤100	≥6.4	≤7.7
Cleared Hills and Coastal Plains								
• mid-reaches of Ovens, Goulburn and Broken catchments	≤25	≤600	≥85	110	≤10	≤500	≥6.4	≤7.7
• Delatite River at Tonga Bridge	≤25	≤500	≥85	110	≤10	≤500	≥6.4	≤7.7
• Goulburn River at Eildon	≤25	≤600	≥85	110	≤10	≤500	≥6.4	≤7.7

Table 4

Results in the Ancona Region in 2007 below, compared to SEPP objectives above – water quality

SEGMENT	INDICATOR							
	Total phosphorus (ug/L)	Total nitrogen (ug/L)	Dissolved oxygen % saturation		Turbidity (NTU)	Electrical conductivity (uS/CM)	pH (pH units)	
	75 th percentile	75 th percentile	25 th percentile	maximum	75 th percentile	75 th percentile	25 th percentile	75 th percentile
BKT005 Upper Brankeet Creek at Brankeet								
BKT006 Brankeet Ck at Ancona								
BKT010 Brankeet Ck at Mitchell Road Crossing					15	175		
BKT020 Brankeet Creek downstream at Black's pump								
BKT025 Brankeet Ck at Ancona Woodfield Road	60		86	96	22	170	6.8	7.2
HEY010 Upper Heyfield Creek (Tributary to Brankeet Ck)					39	165		
NTH010 North Creek before Brankeet Confluence					118	98		

Table 5

To meet the SEPP Objectives, three quarters of the readings taken should not exceed the 75th percentile. In the case of the results in the Ancona region for 2007, none of the sites recorded met the 75th percentile for turbidity. Brankeet Creek at Ancona (Woodfield Rd) was the only site compared against other parameters, with results falling outside of the 75th percentile for Total Phosphorus and Dissolved Oxygen (although border line only.) Electrical Conductivity was well below the required value, and pH results were within the required range. It must be noted that SEPP objectives are long term theoretical goals for water quality. It is not expected that waterways will comply at this stage.

Ancona Region General Comments

Although it is difficult to determine trends with such inconsistent data, these results form an excellent base for further monitoring. Five of the seven sites were on the Brankeet Creek, with most results taken at BKT006 at Ancona.

- a) With the exception of BKT006 at Ancona, which rated consistently excellent, turbidity was mixed but generally poor.
- b) Salinity, though patchy, was rated as "good" with all recorded results falling between 80EC and 240 EC.
- c) Phosphorus was poor to fair and failed to meet the SEPP Objective for Total Phosphorus.
- f) Overall a good basis for further monitoring in this area.

These results have so far been distributed to

- Goulburn Broken Catchment Management Authority
- Waterwatch State Office

Appendix A

Chemical Test Ratings

The figures below are a guide for each of the water quality tests to help you interpret your results in terms of water quality.

Index of Stream Conditions (ISC) Ratings for each of the parameters.

Parameter	Excellent	Good	Fair	Poor	Degraded
Conductivity (uS/cm EC) Mountain	<30	<90	<150	<225	>225
Conductivity (uS/cm EC) Valley	<80	<240	<400	<600	>600
Conductivity (uS/cm EC) Plain	<100	<250	<500	<750	>750
Turbidity (NTU) Mountain	<5.0	<7.5	<10	<12.5	>12.5
Turbidity (NTU) Valley	<10	<12.5	<15	<22.5	>22.5
Turbidity (NTU) plain	<15	<17.5	<20	<30	>30
pH	6.0 - 7.5	5.5 - 6 or <8.0	8.0 - 8.5	5.0 - 5.5 or 8.5 - 9.0	< 5.0 or > 9.0
Reactive Phosphorus (mg/L)	< 0.008	< 0.02	< 0.04	< 0.08	> 0.08
Total Phosphorus (mg/L)	< 0.01	< 0.025	< 0.05	< 0.10	> 0.10
Nitrates (mg/L)	< 0.05	< 0.1	< 0.2	< 0.4	> 0.4

Appendix B

Ancona Report

For Samples from 01 Jan 1995 to 31 Dec 2007

SiteNo: BKT005 Upper Brankeet Creek at Brankeet

Parameters:

<u>Date:</u>	<u>Time:</u>	<u>Sample Type:</u>	Temp ° C	TPhos mg/L P	EC µS/cm	Turb NTU	% O2 Sat	Ecoli orgs/100 mL	pH pH Units	Flow ML/day	Rainfall mm	DO mg/L
06-Jul-98	9:30 AM	Grab				200					51	
07-Jul-98	10:00 AM	Grab				100					1	
11-Jul-98	11:00 AM	Grab				35					5	
15-Jul-98	3:00 PM	Grab				9					0	
14-Aug-98	10:30 AM	Grab				40					25	
19-Aug-98	2:00 PM	Grab				12					15	
21-Oct-98	9:35 AM	Grab				20					10	
19-Jul-00	4:20 PM	Grab				110					27.5	
26-Feb-06	12:00 PM	Grab				19					25	
30-Apr-06	12:00 PM	Grab				6					5	

SiteNo: BKT006 Brankeet Creek at Ancona

Parameters:

<u>Date:</u>	<u>Time:</u>	<u>Sample Type:</u>	Temp ° C	TPhos mg/L P	EC µS/cm	Turb NTU	% O2 Sat	Ecoli orgs/100 mL	pH pH Units	Flow ML/day	Rainfall mm	DO mg/L
30-Jan-97	1:15 PM	Grab		0.048	100	5			6.8	19.2		7.4
20-Feb-97	12:45 PM	Grab		0.068	100	5.1			7.1	12.3		5.2
20-Mar-97	10:40 AM	Grab		0.033	97	4.9			6.9	10.4		9.4
17-Apr-97	12:00 PM	Grab		0.039	98	4.6			6.9	12.5		8.2
22-May-97	11:30 AM	Grab		0.03	92	6			6.9	16.6		10.9
26-Jun-97	1:00 PM	Grab		0.032	92	6.7			7.6	16.8		12.3
24-Jul-97	1:25 PM	Grab		0.34	94	5			7.6	18.1		
21-Aug-97	1:10 PM	Grab		0.3	93	6.6			7.2	20.7		12.6
23-Oct-97	1:00 PM	Grab		0.015	100	8.1			8	15.2		11.1
20-Nov-97	1:15 PM	Grab		0.042	98	8.1			8.1	14.7		9.4
17-Dec-97	11:20 AM	Grab		0.055	120	6.2			7.4	7		8.5

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Parameters:

<u>Date:</u>	<u>Time:</u>	<u>Sample Type:</u>	Temp ° C	TPhos mg/L P	EC µS/cm	Turb NTU	% O2 Sat	Ecoli orgs/100 mL	pH pH Units	Flow ML/day	Rainfall mm	DO mg/L
22-Jan-98	1:00 PM	Grab		0.063	120	5.4			7.6	3.8		7
19-Feb-98	12:25 PM	Grab		0.043	110	5.1			7.5	5.1		8.2
12-Mar-98	1:20 PM	Grab		0.042	120	4			7.2	2.9		7.4
16-Apr-98	10:30 AM	Grab		0.042	130	5.5			7.4	7		10.4
21-May-98	11:10 AM	Grab		0.032	110	4.5			7	12		10.7
18-Jun-98	3:00 PM	Grab		0.033	100	5			7.8	12		12
23-Jul-98	10:50 AM	Grab		0.03	110	8.8			7.3	16		11.9
20-Aug-98	2:00 PM	Grab		0.036	110	9.5			7.5	33		10.8
01-Oct-98	10:30 AM	Grab		0.068	89	14			6.6	42.4		
22-Oct-98	2:20 PM	Grab		0.036	83	8.4			7.2	30.1		10.2
19-Nov-98	1:30 PM	Grab		0.037	95	8.7			7.4	13.7		9
16-Dec-98	10:00 AM	Grab		0.041	91	4.3			7.4	13.7		9.5
21-Jan-99	11:15 AM	Grab		0.049	110	4.2			7.1	6.4		7.4
18-Feb-99	11:20 AM	Grab		0.049	120	5.8			6.9	4.5		7.5
18-Mar-99	10:30 AM	Grab		0.043	110	4.6			7	4.3		8.8
22-Apr-99	2:00 PM	Grab		0.039	98	5.9			7.2	9.7		11
20-May-99	11:10 AM	Grab		0.033	100	4.3			6.7	10.2		10.6
24-Jun-99	11:50 AM	Grab		0.038	88	9.7			7.1	34		10.6
22-Jul-99	12:00 PM	Grab		0.053	90	14			7.1	41		11
19-Aug-99	10:00 AM	Grab		0.046	90	16			6.9	46.8		10.5
23-Aug-99	12:45 PM	Grab		0.046	91	9.5			7.1	26.9		9.7
14-Oct-99	11:55 AM	Grab		0.044	77	8.7			7.4	26.8		10
11-Nov-99	11:00 AM	Grab		0.046	80	8.2			6.5	17.6		9.6
16-Dec-99	10:40 AM	Grab		0.068	89	25			7.2	17.1		8.4
20-Jan-00	12:20 PM	Grab		0.046	96	4.5			7.5	6.1		7.9
17-Feb-00	10:15 AM	Grab			110	4.5			7.2	3.9		7.7
23-Mar-00	10:30 AM	Grab			100	3.4			7.9	5.2		8.8
18-May-07	11:00 AM	Grab	15.1		190	80				rising	68	
18-Jul-07	11:00 AM	Grab	8.0		110	9				steady	18	
24-Aug-07	11:00 AM	Grab	12.2		100	8				steady	0	

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Waterwatch Victoria Application (WVA) - Site Report

SiteNo: BKT010 Brankeet Creek at Mitchell Road Crossing

Parameters:

<u>Date:</u>	<u>Time:</u>	<u>Sample Type:</u>	Temp ° C	TPhos mg/L P	EC µS/cm	Turb NTU	% O2 Sat	Ecoli orgs/100 mL	pH pH Units	Flow ML/day	Rainfall mm	DO mg/L
25-Jun-98	5:00 PM	Grab				11					4	
26-Jun-98	5:00 PM	Grab				8					0	
27-Jun-98	5:00 PM	Grab				5					0	
29-Jun-98	4:30 PM	Grab				5					2.5	
06-Jul-98	5:00 PM	Grab				60					32.5	
07-Jul-98	5:00 PM	Grab				22					1	
08-Jul-98	5:00 PM	Grab				15					0	
14-Jul-98	5:00 PM	Grab				5					0.5	
29-Jul-98	5:00 PM	Grab				40					0	
02-Aug-98	4:00 PM	Grab				8					16	
03-Aug-98	4:00 PM	Grab				5					0	
17-Aug-98	12:00 PM	Grab				40					16.5	
18-Aug-98	8:00 AM	Grab				30					0	
19-Aug-98	8:00 AM	Grab				10					0	
22-Aug-98	2:00 PM	Grab				24						
23-Aug-98	2:00 PM	Grab				10						
24-Aug-98	2:00 PM	Grab				5						
13-Sep-98	3:00 PM	Grab				25					23	
15-Sep-98	4:00 PM	Grab				10					8	
16-Sep-98	8:00 AM	Grab				13					5	
22-Sep-98	3:00 PM	Grab				30					14	
23-Sep-98	2:00 PM	Grab				150					48	
24-Sep-98	4:00 PM	Grab				50					20	
25-Sep-98	5:00 PM	Grab				20					0	
27-Sep-98	4:30 PM	Grab				14					0	
02-Oct-98	6:00 PM	Grab				21					13	
03-Oct-98	4:00 PM	Grab				30					0	

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Waterwatch Victoria Application (WVA) - Site Report

Parameters:

<u>Date:</u>	<u>Time:</u>	<u>Sample Type:</u>	Temp ° C	TPhos mg/L P	EC µS/cm	Turb NTU	% O2 Sat	Ecoli orgs/100 mL	pH pH Units	Flow ML/day	Rainfall mm	DO mg/L
04-Oct-98	5:00 PM	Grab				17					0	
06-Oct-98	5:00 PM	Grab				40					17	
07-Oct-98	4:00 PM	Grab				30					2	
08-Oct-98	4:00 PM	Grab				13					0	
10-Oct-98	5:00 PM	Grab				8					0	
18-Oct-98	4:00 PM	Grab				5					8	
21-Oct-98	9:00 AM	Grab				5					2	
12-Nov-98	5:00 PM	Grab				50					49	
13-Nov-98	4:00 PM	Grab				18					3.75	
14-Nov-98	3:00 PM	Grab				23					6.75	
15-Nov-98	10:00 AM	Grab				15					0	
18-Nov-98	10:00 AM	Grab				3					0	
14-Aug-99	11:00 AM	Grab				23					17	
22-Jun-00	4:00 PM	Grab				27					5	
23-Jun-00	4:00 PM	Grab				27					25	
24-Jun-00	4:00 PM	Grab				17						
25-Jun-00	4:00 PM	Grab				10						
26-Jun-00	4:00 PM	Grab				6						
27-Jun-00	4:00 PM	Grab				4						
28-Jun-00	4:00 PM	Grab				25					3.25	
29-Jun-00	4:00 PM	Grab				17					3.25	
30-Jun-00	4:00 PM	Grab				10						
06-Jul-00	4:00 PM	Grab				50					15	
07-Jul-00	4:00 PM	Grab				40					0	
08-Jul-00	4:00 PM	Grab				29					0	
09-Jul-00	4:00 PM	Grab				29						
10-Jul-00	4:00 PM	Grab				15						
11-Jul-00	4:00 PM	Grab				10						
18-Jul-00	4:00 PM	Grab				2						
23-Mar-06	12:00 PM	Grab				10					0	
30-Apr-06	12:00 PM	Grab				10					5	
18-May-06	3:00 PM	Grab	12.9		110	16			6.5			
23-Oct-06	1:45 PM	Grab	18.1		120	7			6.9			

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Waterwatch Victoria Application (WVA) - Site Report

Parameters:

<u>Date:</u>	<u>Time:</u>	<u>Sample Type:</u>	Temp ° C	TPhos mg/L P	EC µS/cm	Turb NTU	% O2 Sat	Ecoli orgs/100 mL	pH pH Units	Flow ML/day	Rainfall mm	DO mg/L
11-Apr-07	9:45 AM	Grab	15.1		190	10						
11-Apr-07	9:30 AM	Grab	15.1		190	2				falling	0	
18-May-07	11:30 AM	Grab	15.1		130	140				rising	68	
18-Jul-07	11:30 AM	Grab	8.0		110	33				steady	18	
24-Aug-07	11:20 AM	Grab	11.9		110	10				steady	0	
23-Dec-07	10:00 AM	Grab	17		90	49				steady		

SiteNo: BKT020 Brankeet Creek downstream at Black's Pump

Parameters:

<u>Date:</u>	<u>Time:</u>	<u>Sample Type:</u>	Temp ° C	TPhos mg/L P	EC µS/cm	Turb NTU	% O2 Sat	Ecoli orgs/100 mL	pH pH Units	Flow ML/day	Rainfall mm	DO mg/L
06-Jul-98	10:00 AM	Grab				150					30	
07-Jul-98	11:00 AM	Grab				34					0	
08-Jul-98	11:00 AM	Grab				20					0	
10-Jul-98	3:00 PM	Grab				15					11	
14-Jul-98	4:00 PM	Grab				5					0	
28-Jul-98	4:00 PM	Grab				90					17	
29-Jul-98	2:00 PM	Grab				54					19	
31-Jul-98	4:00 PM	Grab				20					2	
19-Aug-98	10:30 AM	Grab				100					21	
13-Sep-98	4:00 PM	Grab				35					18	
16-Sep-98	11:00 AM	Grab				15					7	
22-Sep-98	11:00 AM	Grab				50					12	
24-Sep-98	11:30 AM	Grab				56					51	
07-Oct-98	10:00 AM	Grab				16					22	
21-Oct-98	5:30 PM	Grab				10					2	
18-Nov-98	4:30 PM	Grab				12					0	
05-Aug-99	11:00 AM	Grab				5					0	
19-Jul-00	4:30 PM	Grab				150					20	
16-Aug-00	4:00 PM	Grab				16					8	
20-Sep-00	4:00 PM	Grab				15					0	

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Waterwatch Victoria Application (WVA) - Site Report

Parameters:

<u>Date:</u>	<u>Time:</u>	<u>Sample Type:</u>	Temp ° C	TPhos mg/L P	EC µS/cm	Turb NTU	% O2 Sat	Ecoli orgs/100 mL	pH pH Units	Flow ML/day	Rainfall mm	DO mg/L
18-Oct-00	4:00 PM	Grab				12					0	
26-Feb-06	12:00 PM	Grab				50					25	
26-Mar-06	12:00 PM	Grab				19					0	
30-Apr-06	12:00 PM	Grab				10					5	

SiteNo: BKT025 Brankeet Creek at Ancona Woodfield Road

Parameters:

<u>Date:</u>	<u>Time:</u>	<u>Sample Type:</u>	Temp ° C	TPhos mg/L P	EC µS/cm	Turb NTU	% O2 Sat	Ecoli orgs/100 mL	pH pH Units	Flow ML/day	Rainfall mm	DO mg/L
15-Mar-06	4:40 PM	Grab	17.8	0.05	145	24	92	410	7.0		0	8.5
17-May-06	3:45 PM	Grab	12.1	<0.02	145	18.4	91		6.9		0	9.5
26-Jul-06	4:15 PM	Grab	9.6	0.04	152	19		121	7.1			
23-Aug-06	2:20 PM	Grab	10.2	0.04	141	11		37	7.2			
20-Sep-06	4:20 PM	Grab	15.2		143	22	97		7.2		0	9.4
30-Sep-06	4:40 PM	Grab		0.03	146	11					0	
16-Oct-06	11:00 AM	Grab	16	0.05	146	15	83		7.7	steady	0	8.4
20-Dec-06	2:50 PM	Grab	25.7	0.08	204	21	100	1	7.7		0	7.6
17-Jan-07	3:30 PM									dry	0	
21-Feb-07	3:45 PM	Grab								dry		
21-Mar-07	2:00 PM									dry	25	
18-Apr-07	5:00 PM									dry	0	
16-May-07	3:15 PM	Grab	16.2	0.06	157	24	87	365	7.0	steady		8.1
19-Jun-07	3:30 PM	Grab	7.4	0.04	166	11	84	42	6.8	steady	0	9.6
18-Jul-07	3:45 PM	Grab	6.9	0.06	194	43	86	613	6.7			9.9
14-Aug-07	3:40 PM	Grab	10.2		173	17		50	6.7			
19-Sep-07	3:50 PM	Grab	12	0.03	154	13	96	41	6.9	steady	0	9.6
16-Oct-07	3:45 PM	Grab	17.3	0.05	161	12	88		7.3	low	0	8.6
18-Dec-07	3:10 PM	Grab	23.4	0.08	141	19	91	31	7.3	steady	0	7.8

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Waterwatch Victoria Application (WVA) - Site Report

SiteNo: HEY010 Upper Heyfield Creek (Tributary to Brankeet Creek)

Parameters:

<u>Date:</u>	<u>Time:</u>	<u>Sample Type:</u>	Temp ° C	TPhos mg/L P	EC µS/cm	Turb NTU	% O2 Sat	Ecoli orgs/100 mL	pH pH Units	Flow ML/day	Rainfall mm	DO mg/L
12-Aug-98	4:30 AM	Grab				19					9	
12-Aug-98	4:30 PM	Grab				19					9	
19-Aug-98	3:00 AM	Grab				9					0	
19-Aug-98	3:00 PM	Grab				9					0	
22-Aug-98	3:00 AM	Grab				10.5					7.5	
22-Aug-98	3:00 PM	Grab				10.5					7.5	
13-Sep-98	11:00 AM	Grab				20					14	
16-Sep-98	2:45 AM	Grab				9					9	
23-Sep-98	3:00 AM	Grab				400					65	
03-Oct-98	4:30 PM	Grab				27					32	
07-Oct-98	4:00 PM	Grab				15					25	
21-Oct-98	11:30 AM	Grab				8					1	
15-Nov-98	3:30 PM	Grab				9					61	
18-Nov-98	11:30 AM	Grab				8					0	
08-Jan-99	3:30 PM	Grab				15					15	
27-Jan-99	12:00 PM	Grab				8					12	
03-Feb-99	12:00 PM	Grab				15					18	
08-Feb-99	12:00 PM	Grab				10					8	
18-Feb-99	12:00 PM	Grab				8					8	
24-Feb-99	12:00 PM	Grab				8					6	
21-Jul-99	4:30 PM	Grab				10					6	
10-Aug-99	4:00 PM	Grab				24					53	
14-Aug-99	4:00 PM	Grab				40					15	
28-Aug-99	12:00 PM	Grab				22					47	
26-Feb-06	12:00 PM	Grab				9					25	
26-Mar-06	12:00 PM	Grab				9					0	
30-Apr-06	12:00 PM	Grab				9					5	

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Waterwatch Victoria Application (WVA) - Site Report

			<u>Parameters:</u>									
<u>Date:</u>	<u>Time:</u>	<u>Sample Type:</u>	Temp ° C	TPhos mg/L P	EC µS/cm	Turb NTU	% O2 Sat	Ecoli orgs/100 mL	pH pH Units	Flow ML/day	Rainfall mm	DO mg/L
18-May-07	10:00 AM	Grab	14.1		160	51				rising	68	
18-Jul-07	10:00 AM	Grab	8.3		130	5				steady	18	
24-Aug-07	10:00 AM	Grab	13.4		150	19				steady	0	
23-Dec-07	10:20 AM	Grab	17		180	35				steady		

SiteNo: NTH010 North Creek before Brankeet Confluence

			<u>Parameters:</u>									
<u>Date:</u>	<u>Time:</u>	<u>Sample Type:</u>	Temp ° C	TPhos mg/L P	EC µS/cm	Turb NTU	% O2 Sat	Ecoli orgs/100 mL	pH pH Units	Flow ML/day	Rainfall mm	DO mg/L
26-Feb-06	12:00 PM	Grab				17					25	
26-Mar-06	12:00 PM	Grab				9					0	
30-Apr-06	12:00 PM	Grab				9					5	
18-May-07	10:30 AM	Grab	14.5		120	400				rising	68	
18-Jul-07	10:30 AM	Grab	6.8		80	24				steady	24	
24-Aug-07	10:30 AM	Grab	10.4		80	10				steady	0	
23-Dec-07	11:00 AM	Grab	16		90	22				steady		

